IN THE SPECIFICATION

Please replace the paragraph beginning at page 23, line 16, with the following rewritten paragraph:

Similarly, when the first board transfer device 10a is transferring the boards Sa or is altering the width of its transfer way, the controller 60 advances the control operation step from Step 120 or 121 to Step 125, and the second component placing head 43b successively mounts components at designated positions within the interference risk zone [[S1]] Si on the board Sb held on the second board transfer device 10b. Also in this case, the first component placing head 43a which does not perform mounting the components on the board Sa is made take shelter or flee, so that it does not occur that the first component placing head 43a interferes with the second component placing head 43b which is mounting the components within the interference risk zone Si on the board Sb. Or, where the first component placing head 43a is directed to help the second component placing head 43b in mounting the components within the interference risk zone Si on the board Sb, the productivity of the board Sb can be enhanced.

Please replace the paragraph beginning at page 26, line 12, with the following rewritten paragraph:

Upon termination of altering the transfer way width of the second board transfer device 10b, as shown in Figure 16, the mountings by the second component placing head 43b of the components are performed on the type-C boards successively loaded by the second component transfer device 10b, in parallel time relation with the mountings by the first

component placing head 43a of the components on the type-A boards. Where the feeders for the components to be mounted on the type-C boards have been set on the feeder table at the side of the first component supply device 45a, the chance for the both component placing heads 43a and 43b to interfere with each other increases, and therefore, measures have to be taken to obviate the interference. In order to take such measures, in the illustrated embodiment in Figure 16, the stop positions of the type-A and type-C boards are made to be different from each other, and the feeders for the type-A boards and those for the type-C boards are arranged with some space (e.g., several vacant or non-use feeders) therebetween. If the measures are imperfect, as shown in Figure 17, a shunting or turnout control is executed, for example, to retract the first component placing head 43a temporally to a turnout position when the second component placing head 43b is about to move towards the feeders at the side of the first component supply device 45a for picking up the components therefrom. Of course, the control to obviate the interference becomes unnecessary after termination of the type-A board production.

Please replace the paragraph beginning at page 27, line 14, with the following rewritten paragraph:

Next, the sixth embodiment will be described with reference to Figures 18 and 27. This embodiment uses a component mounting apparatus composed of the two board transfer devices 10a, 10b, the two component supply devices 45a, 45b and the component placing device 40 including one or the two component placing heads 43a, 43b. Of the two board transfer devices 10a, 10b, one of them is set or assigned as regular type product transfer

device exclusively used for transferring boards for the regular type products, and the other of them is set or assigned as interruption or ~~brake-in~~ unscheduled product transfer device used primarily for transferring boards for interruption or ~~brake-in~~ unscheduled products which are different in board width from those for the regular type products.

Please replace the paragraph beginning at page 27, line 24, with the following rewritten paragraph:

In the course of the production according to a schedule that a plurality of the type-A products are to be produced, a command to produce the type-B products on an urgent, ~~brake-in~~ unscheduled basis may be input to the controller 60 from the host computer. In such a case, if the both of the board transfer devices 10a, 10b which have been arranged for the regular type products were rearranged for the ~~brake-in~~ unscheduled products, much loss time would be taken to make the rearrangement. In particular, where the number of the ~~brake-in~~ unscheduled products to be produced is small, the loss time would become much larger if both of the board transfer devices 10a, 10b were rearranged at the same time.

Please replace the paragraph beginning at page 28, line 5, with the following rewritten paragraph:

In this particular embodiment, in order to reduce the time taken to make the rearrangement, one of the board transfer devices 10a (or 10b) is assigned as regular type product transfer device used exclusively for transferring the boards for the regular type products, while the other transfer device 10b (or 10a) is assigned as ~~brake-in~~ unscheduled

product transfer device for primarily transferring the boards for the ~~brake-in~~ unscheduled products which are different in board width from those for the regular type products. As setting means for making this assignment, for example, the memory unit 63 is provided with setting areas which correspond respectively to the board transfer devices 10a, 10b. When a selected one of the board transfer devices is to be assigned as the regular type product transfer device, numeral "1" is set in the setting area associated thereto, or when it is to be assigned as the ~~brake-in~~ unscheduled product transfer device, numeral "0" is set therein. For example, where the board transfer devices 10a and 10b are to be assigned respectively as the regular type product transfer device and the ~~brake-in~~ unscheduled product transfer device, numerals "1" and "0" are input from the input unit 64 of the controller 60 to the setting areas of the memory unit 63 respectively associated with the board transfer devices 10a, 10b. And, the feeders retaining the components for the regular type products are exclusively set in the component supply device 45a at the side of the board transfer device 10a, while vacant slots prepared for use in setting the feeders retaining the components for the ~~brake-in~~ unscheduled products are left in the components supply device 45b at the side of the board transfer device 10b.

Please replace the paragraph beginning at page 28, line 26, with the following rewritten paragraph:

When a command for production of the ~~brake-in~~ unscheduled products (i.e., type-B products) is input from the host computer to the controller 60 (Step 132 in Figure 27) in the course of the ordinary production wherein the boards for the regular type products (i.e., type-

A boards) are transferred on both of the board transfer devices 10a, 10b and wherein the regular type products (i.e., type-A products) are under the ordinary production at the both of the board transfer devices 10a, 10b (Step 131), the board transfer device 10b prepared for the ~~brake-in~~ unscheduled products stops loading a successive type-A board and performs the processing to discharge the type-A board now thereon. (Step 133) The mounting program for mounting the components on the board transferred by the board transfer device 10b to the component mounting position is changed from a type-A product mounting program to a type-B product mounting program. (Step 134) Then, the transfer way width of the board transfer device 10b in a direction perpendicular to the transfer direction is altered to meet a rail-to-rail width corresponding to the type-B boards. (Step 135) Thereafter, it is judged whether or not, the component mountings on the type-A boards at the board transfer device 10a and the component mountings on the type-B boards at the board transfer device 10b cause the interference between the component placing heads 43a, 43b so that such simultaneous mountings are impossible. (Step 136) If possible, the component mountings on the type-A boards at the board transfer device 10a and the component mountings on the type-B boards at the board transfer device 10b are carried out simultaneously. (Step 137) Where the simultaneous productions are impossible, on the contrary, the component mountings at the board transfer device 10a are halted, during which time the component mountings on the type-B boards are carried out at the board transfer device 10b until the number of the type-B boards reaches a commanded number. (Step 138) When the component mountings on the type-B boards of the commanded number are completed (Step 139), the board transfer device 10a is restored to the production for the type-A products, and the type-A products are

produced as ordinary on both of the board transfer devices 10a, 10b.

Please replace the paragraph beginning at page 30, line 25, with the following rewritten paragraph:

As shown in Figure 19 for example, it is now assumed that the board transfer device 10a has been set as the regular type product transfer device, while the board transfer device 10b has been set as the ~~brake-in~~ unscheduled product transfer device and that one-side production is being performed wherein the full-scale basis production of the first regular type products is carried out on the first regular type boards (type-A boards) at the board transfer device 10a, while no component mounting operation is being carried out at the board transfer device 10b. It is further assumed that another one-side production is further commanded for performing component mountings on the boards (type-B boards) for the second regular type products while the preceding one-side production is being carried out for component mountings on the first regular type boards (type-A boards) at the board transfer device 10a. In this case, there is set a mounting program for performing component mounting operations on the type-B boards at the board transfer device 10b, and the rail-to-rail width of the board transfer device 10b is adjusted or altered to correspond to the type-B boards. Thus, the full-scale basis mountings of components are performed on the type-A boards at the board transfer device 10a, and the trial basis mountings of components are performed on the type-B boards at the board transfer device 10b. Where the change from the first regular type products to the second regular type products has been determined in dependence upon the production schedule, the timing when the trial basis component mountings are to be started is

determined taking into account the progress in production of the first regular type products, the time period for the trial basis production of one or several second regular products and the time period necessary for inspection and reworking on the one or several products produced on the trial basis. Where the change to the second regular type products is suddenly instructed, the trial basis component mountings on the boards for the second regular type products are started at the time point at which the change command is given. The type-B boards (one or several) with components mounted thereon are unloaded from the board transfer device 10b and are inspected. The inspection is carried out with respect to such items as mounting position, wrong components, setting error of feeders, mounting position accuracy and so on. If any problem arises as a result of the inspection, modifications concerning such faulty items are made for the adjustment in component mountings on the type-B boards at the board transfer device 10b, the change in the set feeders and the like. After the problems are all solved, the component mountings on the type-B boards are started on the full-scale basis at the board transfer device 10b, and the component mountings on the type-A boards at the board transfer device 10a are terminated when the type-A products of a scheduled number are attained. Thereafter, in order that the setting change is performed to set the board transfer device 10b as the regular type product transfer device and the board transfer device 10a as the ~~brake-in~~ unscheduled product transfer device, numerals "1" and "0" are input from the input device 64 respectively to the setting areas for the board transfer devices 10a, 10b of the memory unit 63 of the controller 60.

Please replace the paragraph beginning at page 32, line 11, with the following rewritten paragraph:

· It is now assumed that as shown in Figure 20, the both-side productions are being performed to mount components on the boards (type-A boards) for the first regular type products at both of the board transfer device 10a, 10b on a full-scale basis wherein the board transfer device 10a has been set as the regular type product transfer device while the board transfer device 10b has been set as the ~~brake-in~~ unscheduled product transfer device. When in this state, another both-side production command is given for mounting components on the boards (type-B boards) for the second type products on a full-scale basis, the board transfer device 10b stops loading a further type-A board thereto and unloads the type-A board remaining thereon immediately or upon completion of the mountings of all the components therefor in order that the trial basis mountings of components on the type-B boards can be done at the board transfer device 10b. Then, the mounting program for component mountings at the board transfer device 10b is changed from the mounting program for the type-A boards to that for the type-B boards, and the rail-to-rail width of the board transfer device 10b is adjusted to correspond to the type-B boards. Thus, the component mounting operations are carried out on the type-A boards at the board transfer device 10a on the full-scale basis and on the type-B boards at the board transfer device 10b on the trial basis. One or several type-B boards each with components mounted thereon are unloaded from the board transfer device 10b and are inspected. If any problem arises as a result of the inspection, modifications are made concerning the faulty items, and thereafter, the component mountings are carried out on the type-B boards at the board transfer device 10b on the full-scale basis.

In due course, the type-A boards with the components mounted at the board transfer device 10a reach the scheduled number, and then, the component mountings of the type-B boards on the trial basis are performed at the board transfer device 10a in the same manner as done at the board transfer device 10b. Subsequently, the component mountings on the type-B boards on the full-scale basis are started after any problem is found out and solved.

Please replace the paragraph beginning at page 34, line 20, with the following rewritten paragraph:

In a modified form of the invention, in the same manner as the inside support pedestals 12a, 12a are done, the outside support pedestals 12, 12 may be slidably guided on the base 11 and may be movable by drive servomotors through screw shafts thereby to make the outside guide rails 25a, [[25a]] 25b adjustable by the position adjusting means in the direction perpendicular to the lengthwise direction of the outside guide rails 25a, [[25a]] 25b. In this modified form, it becomes realized to make a larger extra space at the center side of the board transfer devices 10a, 10b, so that the chance for the two component placing heads 43a, 43b to interfere with each other can be minimized more reliably. This can be done by positioning the outside guide rails 25a, 25b at the outmost positions respectively closest to the component supply devices 45a, 45b and by adjusting the center side guide rails 26a, 26b to set the rail-to-rail width of each board transfer device 10a or 10b in correspondence to the width of the boards transferred therealong. Further, in this modified form of the embodiment, it becomes realized to shorten the moving distances of the component placing heads 43a, 43b and to obviate the interference therebetween. To this end, a prior judgment is made of

whether or not, any feeder for the components to be mounted on the boards transferred by the board transfer devices 10a, 10b has been set in the component supply device 45b or 45a located at the remote side. And, where it can be confirmed that any such feeder has been set only in the component supply device 45b or 45a located at the closer side, the outside guide rails 25a, 25b are controlled to be positioned closest to the component supply device 45b or 45a, as mentioned earlier.

Please replace the paragraph beginning at page 36, line 18, with the following rewritten paragraph:

In accordance with a command from the controller 60, the first shifting device 52 classifies the boards of plural kinds or types loaded from a preceding production station into the boards Sa to be sent onto the first board transfer device 10a and those Sb to be sent onto the second board transfer device 10b and feeds the former, as they are, onto the first board transfer device 10a of the first mounting station 50 and the latter onto the second board transfer device 10b of the first mounting station 50 after shifting them to the second entrance side [[boar]] <u>board</u> transfer device 52b. That is, the first shifting device 52 is provided with an entrance side shifting mechanism for performing such shifting motion. In the Figure 22, the shifting mechanism is represented by an arrow of the shape "N" and for the sake of brevity, is omitted from being described in detail. Although the first entrance side board transfer device 52a in Figure 22 is illustrated to load the boards from the preceding production station, the second entrance side board transfer device 52b may be to load the boards from the preceding production station in place of the first entrance side board transfer

device 52a. Moreover, the boards from the preceding production station may be loaded onto both of the entrance side board transfer devices 52a, 52b, in which case the entrance side shifting mechanism may be a little different in specific function and construction from that aforementioned.

Please replace the paragraph beginning at page 41, line 2, with the following rewritten paragraph:

Thus, the boards Sa, Sb have components mounted thereon by the component mounting apparatus of the mounting station 50, 51 and then, are sent out to the first and second exit side board transfer devices 56a, 56b of the shifting device 56 with the inspection station. The boards Sa, Sb on which components are further to be mounted are unloaded from the first exit side board transfer devices 56a to the succeeding mounting station (not shown), while other boards Sa, Sb on which the component mountings have been completed are discharged from the board discharge device 57.

Please replace the paragraph beginning at page 45, line 16, with the following rewritten paragraph:

In a modified formed of the embodiment shown typically in Figure 1, while either one of the two board transfer devices 10a (or 10b) is transferring the board Sa (or Sb) on which component mountings have been completed, or while either one of the two board transfer devices is being adjusted to alter the transfer way width thereof, one of the component placing head 43a (or 43b) which is dedicated to performing the component mountings on the

board Sa (or Sb) at one of the two board transfer devices 10a (or 10b) helps the other component placing head 10b (or 10a) in performing the component mountings at the other board transfer device 10b (or 10a), so that the efficiency in mounting the components on the other board Sb (or Sa) can be enhanced.

Please replace the paragraph beginning at page 46, line 13, with the following rewritten paragraph:

In the embodiment exemplified in Figure 12 for example, while either one of the two board transfer devices 10b (or 10a) is transferring the board Sb (or Sa) on which component mountings have been completed, or while either one of the two board transfer devices is being adjusted to alter the transfer way width thereof, the component placing head 43a mounts the components on the other board Sa at the interference risk zone Si which is adjacent to the center portion between both of the boards Sa, Sb. Thus, in simultaneously mounting components on two boards Sa, Sb respectively at the two board transfer devices 10a, 10b, the one of the component placing head ~~10a (or 10b)~~ 43a (or 43b) can perform the component mountings within the interference risk zone Si with the other component placing head ~~10b (or 10a)~~ 43b (or 43a) being retracted to a turnout or shunting place. Thus, the component mountings on two boards Sa, Sb can be done without the chance for the two component placing heads 43a, 43b to interfere with each other, so that the efficiency in mounting components on the boards can be enhanced.

Please replace the paragraph beginning at page 46, line 27, with the following rewritten paragraph:

In the embodiment exemplified in Figures 18 and 27 for example, of the two board transfer devices 10a, 10b, one of them 10a is set as regular type product transfer device for transferring the boards for the regular type products, while the other transfer device 10b is set as ~~brake-in~~ unscheduled product transfer device for transferring the boards for interruption or ~~brake-in~~ unscheduled products which are different in board width from the regular type products. Thus, when a production command for the ~~brake-in~~ unscheduled products is given during the production of the regular type products, the other board transfer device 10b only can be prepared for the ~~brake-in~~ unscheduled products, so that the rearrangement or preparation of the other board transfer device 10b for the production of the ~~brake-in~~ unscheduled products can be done in a short time period at a low cost.

Please replace the paragraph beginning at page 47, line 10, with the following rewritten paragraph:

In the embodiment described with reference to Figures 20 and 27, where the regular type product in production is to be changed from the first regular type product (type-A) to the second type product (type-B), a trial basis production of the second type product (type-B) is performed at the other transfer device 10b which has been set for the ~~brake-in~~ unscheduled products, while the component mountings are being continued at one of the transfer devices 10a. And, if the trial basis production does not give rise to any problem, the other board transfer device 10b is set as the regular type product transfer device, and the component

mountings on the boards for the second type products (type-B) are then performed on a full-scale basis, in connection with which a setting alteration is executed to set the one board transfer device 10a as the ~~brake-in~~ unscheduled product transfer device. In this way, any problem accompanied by the production of the second type products (type-B) can be extracted prior to the full-scale basis production thereof and without discontinuing the production operation by the component mounting apparatus. Therefore, the occurrence of poor quality after the starting of the full-scale basis production can be obviated, so that the change of the products from a certain type of products to another type of products can be made smoothly.

Please replace the paragraph beginning at page 48, line 17, with the following rewritten paragraph:

In the embodiment exemplified in Figure 21 for example, of the two guide rails 25a, 26a (or 25b, 26b) which are provided on each of the two board transfer devices 10a, 10b for guiding the both sides of the boards, each outside guide rail 25a (or 25b) adjacent to a corresponding one of the component supply devices 45a, (or 45b) is fixed, while each center side guide rail 26a (or 26b) is adjustably positioned in a direction perpendicular to the lengthwise direction of the rails. Thus, when the space between each two guide rails 25a, 26a (or 25b, 26b) is set to be narrow, the extra space is formed between the two movable rails 26a, 26b at the center side of each board transfer device ~~45a 45b~~ 10a, 10b, and the two boards on the board transfer devices 10a, 10b are sufficiently separated with the extra space, so that the chance for the two component placing heads 43a, 43b to interfere with each other can be

minimized.

Please replace the paragraph beginning at page 49, line 28, with the following rewritten paragraph:

In the embodiment exemplified in Figures 8 and 25 for example, the program for controlling the operation of the component mounting apparatus is provided being designed to control the apparatus in such a way that the component placing device 40 mounts the components simultaneously or alternately on two boards Sa, Sb transferred by the two board transfer devices 10b, 10a to respective component mounting positions, and that while either one of the two component placing heads 43a (43b) is mounting the components on either one of the two boards Sa (Sb) within the predetermined interference risk zone Si which is close to the center portion between the two boards Sa, Sb, the other component placing head 43b (43a) mounts the components on the other of the two boards Sb (Sa) at the interference-free zone except for the predetermined interference risk zone [[S1]] Si. This advantageously ensures that the chance for the two component placing heads 43a, 43b to interfere with each other can be minimized and therefore that the efficiency in mounting the components on both of the boards Sa, Sb can be enhanced.

Please replace the paragraph beginning at page 50, line 15, with the following rewritten paragraph:

In the embodiment exemplified in Figures 18 and 27 for example, of the two board transfer devices 10a, 10b, one of them 10a is set as regular type product transfer device for

transferring the boards only for the regular type products (type-A), while the other transfer device 10b is set as ~~brake-in~~ unscheduled product transfer device for transferring the boards for ~~brake-in~~ unscheduled products (type-B) which are different in the board width from the regular type products (type-A). The program for controlling the operation of the component mounting apparatus which has been so set is provided to be designed to control the apparatus in such a way that in response to a production command for ~~brake-in~~ unscheduled products of a certain type (type-B) other than the regular type products (type-A), the other board transfer device 10b is operated to unload the board for the regular type products (type-A) therefrom while preventing another board for the regular type products (type-A) from being loaded thereto, a mounting program for controlling the mounting operations at the other board transfer device 10b is changed to another mounting program corresponding to the ~~brake-in~~ unscheduled products of the certain type (type-B), the other board transfer device 10b is adjusted to have a rail-to-rail width corresponding to the ~~brake-in~~ unscheduled products of the certain type (type-B), and the boards for the ~~brake-in~~ unscheduled products of the certain type (type-B) are successively loaded onto the other board transfer device 10b to have components mounted thereon. Thus, when the command for the production of the ~~brake-in~~ unscheduled products (type-B) is given during the production of the regular type products (type-A), both the two board transfer devices 10a, 10b are not required to be rearranged or prepared immediately, and instead, only the board transfer device 10b set for the ~~brake-in~~ unscheduled products (type-B) can be rearranged or prepared for the ~~brake-in~~ unscheduled products (type-B) without being thrown into the state of disorder. This advantageously makes it possible to perform the rearrangement or preparation of the transfer device within a

short time period and at low cost.

Please replace the paragraph beginning at page 51, line 14, with the following rewritten paragraph:

In the embodiment exemplified in Figures 18 and 19 for example, the program for controlling the operation of the component mounting apparatus is provided to be designed to control the apparatus as follows. That is, where the regular type product in production is to be changed from the first regular type product (type-A) to the second type product (type-B), a trial basis production of the second type product (type-B) is performed at the other transfer device 10b which has been set for the ~~brake-in~~ unscheduled products, while the component mountings are being continued at one of the transfer devices 10a. And, if the trial basis production does not give rise to any problem, the other board transfer device 10b is set for the regular type products, and the component mountings on the boards for the second type products (type-B) are then performed on a full-scale basis, in connection with which a setting alteration is executed to set the one board transfer device 10a as the ~~brake-in~~ unscheduled product transfer device. According to the program, when the command for the production of the ~~brake-in~~ unscheduled products (type-B) is given during the production of the regular type products (type-A), both the two board transfer devices 10a, 10b are not required to be rearranged or prepared immediately, and instead, only the board transfer device 10b set for the ~~brake-in~~ unscheduled products (type-B) can be rearranged or prepared for the ~~brake-in~~ unscheduled products (type-B) without being thrown into the state of disorder. In this way, any problem accompanied by the production of the second type products can be extracted

prior to the full-scale basis production thereof without discontinuing the production operation by the component mounting apparatus. Therefore, the occurrence of poor quality after the starting of the full-scale basis production can be obviated, so that the change of the products from a certain kind of products to another kind of products can be made smoothly.